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Second Party Opinion

Nederlandse Waterschapsbank (NWB Bank) Green Bond Framework

Sept. 2, 2025

Location: Netherlands **Sector:** Financial institutions

Alignment Summary

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✕

✓ Green Bond Principles, ICMA, 2025

See Alignment Assessment for more detail.

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Dark green

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

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Strengths

Dutch water authorities--the sole recipients of financing from proceeds issued under this framework--manage an advanced flood defense program. The environmental and climate impacts associated with the construction and management of flood defense systems, namely embodied emissions from materials, are systematically addressed through the water authorities' safeguards and processes. This includes the use of locally sourced or reused materials and electrified construction equipment, which also generate co-benefits to nature.

Weaknesses

No weaknesses to report.

Areas to watch

Eligible activities may have a range of environmental risks and benefits. This includes, for example, the use of fossil fuel-powered equipment. However, it is unlikely that fossil fuel-powered sites will be funded with proceeds issued under this framework, because the Dutch water authorities use tax levies to cover the majority of their financing needs.

Shades of Green Projects Assessment Summary

NWB Bank finances the balance sheet activities of Dutch water authorities. It therefore does not have visibility into the allocation of proceeds at the project level. That said, based on the expected budget distribution of the water authorities, NWB Bank expects that 81% of the proceeds will be dedicated to adaptation, 12% to mitigation, and 7% to biodiversity.

The issuer expects a minimum of 70% of proceeds to be allocated to new financing projects, while the remainder will be directed to refinancing.

Based on the project categories' Shades of Green detailed below, the expected allocation of proceeds, and consideration of environmental ambitions reflected in NWB Bank's Green Bond Framework, we assess the framework as Dark green.

Mitigation	**Dark green**
Energy recovery from wastewater and extraction of phosphor	

Adaptation	**Dark to Medium green**
Flood protection and other flood defenses	
Pumping stations	
Sustainable use of water	
Water shortages	

Biodiversity	**Dark to Medium green**
Sanitation and dredging of waterbeds	
Water treatment, transport, and cleaning of wastewater	
Disposal of sewage sludge	

See Analysis Of Eligible Projects for more detail.

Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

Company Description

Nederlandse Waterschapsbank N.V. is a publicly owned promotional bank. It provides financing to the Dutch public sector, which in 2024 totaled €9.6 billion. Most of its lending activities, about 70% in 2024, are to housing associations, followed by water authorities (8%) and municipalities and joint schemes (7%). In its lending portfolio, it also has publicly-owned drinking water companies (4%), government-guaranteed loans (4%), Dutch pass-through NHG residential mortgage-backed securities (2%), health care institutions (2%), and renewable energy projects (1%). NWB is majority owned by Dutch water authorities (81%), the Dutch state (17%), and provinces in the Netherlands (2%). It was founded in 1954 by the water authorities and is headquartered in The Hague. As of 2024, it has 145 employees.

The water authorities to which NWB Bank provides financing to are decentralized public authorities that have the same legal status as municipalities. They are responsible for flood control, water quality and quantity, and wastewater treatment, as mandated by the Water Act ("Waterschapswet"). They receive about 5% of their financing needs from the government, 60% from tax income, and the remainder from NWB.

Material Sustainability Factors

Physical climate risk

Entities with facilities and fixed assets that span large service territories can be highly exposed to physical climate risks. About 60% of the land surface in the Netherlands is highly exposed to flooding from the sea, large rivers, and lakes, according to a study by the IMF. This is because nearly 26% of the land surface is below sea level, making it is susceptible to heavy precipitation and rise in sea level. About 50% of land is kept dry with the help of pumping stations, because water in some areas does not naturally drain away. In 1953, the country experienced a major flood event, which prompted the government to develop and continuously strengthen a flood defense system based on the Environment and Planning Act ("De Omgevingswet"). It consists of dikes, embankments, dunes, and structures around reclaimed land and floodplains near water bodies, as well as dams and barriers in rivers and estuaries.

Water

Water, stormwater, and wastewater utilities face various water supply and quality challenges depending on their location and role in the water life cycle. Water supply and quality issues may result from factors such as infrastructure quality and water lost during extraction and transportation. Other factors could stem from acute physical climate events. While wastewater treatment can serve as a valuable source of treated water for specific end markets, the process may introduce potential downstream impacts on ecosystems and communities depending on the process efficiency, infrastructure capacity, and the quality of the treated water. Operators may encounter stakeholder conflicts driven by competing demands for limited water resources, such as for agriculture, preserving ecosystems, power generation, and other industrial water uses. The potential overflow of untreated sewage and stormwater into water bodies used as water extraction points can also be an issue. In the Netherlands, priority actions related to water are outlined in its National Water Program 2022-2027, which includes river basin management, flood risk management, and its North Sea program, which focuses on adaptation, safety, distribution, quality, and shipping. Water authorities are regulated through national legislation, namely the Water Act, as well EU directives.

Pollution

Globally, high quantities of untreated wastewater are released into the environment where it can contaminate water bodies, making pollution a material concern for the water sector. The sector also manages toxic pollution from agricultural runoff and industrial discharge in water basins. Contaminated water and poor sanitation systems in turn contribute to long-term health conditions, and these customer health and safety events can, when severe, undermine public trust. In the Netherlands, water pollution is regulated through the EU Water Framework Directive, implemented through the national Water Act and Water Decree. Key areas of focus are river basin management, water body restoration, and wastewater collection and treatment.

Issuer And Context Analysis

NWB Bank's eligible project categories directly address the most material sustainability factors for Dutch water authorities--the sole recipients of financing issued under the framework. Eligible categories will seek to address physical climate risk through flood defense systems and reducing water and pollution exposures. The climate change mitigation category seeks to address the climate transition risk of water authorities by reducing emissions from wastewater treatment.

As a promotional bank, NWB Bank plays a key role in financing the Dutch public sector, particularly social housing, which forms the largest part of its lending portfolio. Its medium- and long-term strategy is centered on providing affordable financing to the public sector, while integrating sustainability in all of its financing. NWB Bank expects housing associations to increase their borrowing to meet commitments for new construction and improvements of existing homes, as outlined in National Performance Agreements by the minister of housing and spatial planning.

A key priority for NWB Bank is to support Dutch water authorities in managing flooding, which is the country's principal physical climate risk. The water authorities, which NWB Bank finances, aim to ensure adequate flood protection by 2050. This goal stems from a 2017 safety regulation establishing a target that, by 2050, every Dutch citizen should have no more than a one in 100,000 chance of drowning in a flood per year. NWB Bank tracks progress toward this goal by assessing the compliance of primary and regional flood defenses with regulatory requirements. The country's flood defense mechanisms consists of a network of natural dunes, dikes, dams, floodgates, canals, storm surge barriers, and pumping stations.

The bank integrates environmental, social, and governance (ESG) issues into its risk assessments and supports its clients' sustainability efforts. This entails performing stress tests across short-, medium-, and long-term time horizons, and using future climate scenarios developed by the Network of Central Banks and Supervisors for Greening the Financial System, the Intergovernmental Panel on Climate Change, and the Royal Netherlands Meteorological Institute. These assessments inform the development of key risk indicators to help identify transition pathways for key client groups. NWB Bank's ESG risk management policy outlines how it identifies and mitigates ESG risk, and the bank has developed an approach to address specific environmental issues in its lending portfolio. For biodiversity, it aims for all clients to have nature action plans by 2030, to expand the proportion of green-blue networks (connecting natural areas to landscape elements such as hedges) to 5% by 2035 and 10% by 2050, and for its entire portfolio to be in balance with nature by 2050. Additionally, NWB Bank is working with the water sector to meet EU Water Framework Directive requirements by 2027.

NWB Bank is progressing toward a climate neutral lending portfolio by 2050. The bank's short- and medium-term goals have been validated by the Science Based Targets initiative (SBTi) as aligned with the 1.5 C scenario. This includes commitments to reduce its scope 1 and 2 emissions by 65.5% by 2030 and for 45.6% of its liquidity portfolio to be SBTi-certified. NWB Bank has also established sector-specific emissions intensity thresholds, such as an 82 tons of CO_2 equivalent per million euro target for water authorities--a 32% reduction from the 2018 baseline. The bank aims for an energy positive portfolio by 2035, where financed renewable energy projects

generate more energy than clients' fossil fuels usage, and it supports clients' energy transition investments to facilitate progress toward this goal.

Dutch water authorities, operating under the umbrella of the Association of Water Authorities, aim to be climate neutral by 2035. The sector targets an 80% reduction in methane emissions and a 50% reduction in nitrous oxide emissions by 2030 from 2021 levels. These are the sectors' most material sources of greenhouse gas emissions; in 2023, nitrous oxide accounted for 55% of the sector's total carbon footprint and methane contributed 19%, both stemming from wastewater treatment plants. The carbon footprint of the water authorities has been declining since 2021 due to an increase in self-produced energy, primarily biogas from sewage sludge, alongside other renewable sources such as solar and wind. That said, we note that natural gas is still in use.

Alignment Assessment

This section provides an analysis of the framework's alignment to Green Bond Principles.

Alignment Summary

Aligned = ✓ Conceptually aligned = o Not aligned = ×

✓ Green Bond Principles, ICMA, 2025

✓ Use of proceeds

Proceeds issued under this framework will be used to finance and refinance the activities of Dutch water authorities. The bank includes in its loan agreements a requirement that all financing be used for eligible green projects that contribute to one of the framework's environmental objectives. This means that any non-green expenses included in the water authorities' balance sheets, such as administrative expenses, will be covered by other financing, namely tax income. We assess all the framework green project categories as having a green shade, and we consider the framework to be aligned with the 2025 ICMA Green Bond Principles, though we note that the framework, last updated in March 2022, refers to the 2021 version of the principles. Please refer to the Analysis Of Eligible Projects section for more information on our analysis of the environmental benefits of the expected use of proceeds.

✓ Process for project evaluation and selection

All the loans provided to water authorities undergo NWB Bank's credit process, which includes customer due diligence and ESG risk assessments. As part of these assessments, NWB Bank seeks to identify exposures to environmental and social risks, including human rights violations, money laundering, and impacts on climate and biodiversity, energy, and materials use, as well as physical and transition risks. The bank's sustainability policy includes an exclusion list to prevent financing of hazardous chemicals or fossil fuels, activities that endanger the continued existence of public sector clients (e.g. those that result in water scarcity), the destruction of high conservation biodiversity areas, mining, gambling and casinos, the production of controversial weapons, and unsustainable farming practices. This policy's implementation is monitored by NWB Bank's sustainability advisory board, which also oversees the bank's eligible loan portfolio and approves the allocation of green bond proceeds.

✓ Management of proceeds

NWB Bank uses an internal register to monitor the allocation of proceeds. The bank uses a portfolio approach and immediately allocates its green bond issuance to its portfolio of eligible loans. The bank commits to ensuring that the outstanding balance of green bonds is smaller than the total balance of eligible loans.

✓ Reporting

NWB Bank commits to reporting annually on the allocation and impact of proceeds on its website through an investor letter. This will include a list of financed eligible loans, examples of projects, a summary of NWB Bank's green bond development, and mapping of the activities of the water authorities to EU Taxonomy activities. It will also report on the environmental impacts of the water authorities that received financing. NWB Bank achieves full allocation of proceeds at issuance.

Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "Analytical Approach: Shades Of Green Assessments".

Overall Shades of Green assessment

Based on the project category shades of green detailed below, the expected allocation of proceeds, and the consideration of environmental ambitions reflected in NWB Bank's Green Bond Framework, we assess the framework as Dark green.

Activities that correspond to the long-term vision of a low-carbon climate resilient future.

Our Shades of Green Analytical Approach >

Green project categories

Mitigation

Assessment	Description
Dark green	• Energy recovery from wastewater and extraction of phosphor

Analytical considerations

- Wastewater systems are a key component of a low-carbon, climate-resilient future because they reduce pollution and enhance ecosystems and public health by preventing the contamination of water and soil. The by-product of wastewater treatment facilities is sewage sludge, which can be considered a source of energy and material and can result in lower greenhouse gas emissions when circular resource recovery is applied.
- The Dutch water authorities that receive financing from NWB Bank may invest in facilities that recover energy and phosphor from their wastewater treatment processes. The energy would be reused by the treatment facilities, thereby reducing the climate impact of their operations, and the surplus would be fed into the grid. The extraction of phosphor prevents the eutrophication of surface water that receives the treated wastewater. The phosphor can be used as fertilizer as an alternative to mining phosphate rock, which is an energy-intensive process. According to NWB Bank, in 2023 seven water authorities recovered 108 tons of phosphate. We consider this overall category to be Dark green to reflect the environmental and climate benefits of financing facilities that will reduce the use of fossil energy by wastewater treatment processes and enable the circular recovery of phosphor. That said, we consider any fossil fuel-powered sites to be Medium green due to their higher climate impact. Given that fossil fuel-powered sites are a minor share of the water authorities' infrastructure, and are therefore not likely to receive a significant portion of financing, this has not affected the shade of the overall category. We note that this exposure may be somewhat addressed as water authorities phase out fossil-powered equipment and replace natural gas with biogas generated through anaerobic digestion to reach climate neutrality by 2035 and energy neutrality by 2025.
- Wastewater treatment facilities can be energy intensive and can result in negative environmental impacts such as water, air, and soil pollution from the release of untreated effluent or contaminants. Dutch water authorities implement environmental safeguards mandated by the Environmental and Planning Act. They seek to reduce the effect of their operations, including through purification mechanisms to remove nutrients, pharmaceuticals, and microplastics and anaerobic digestion to decrease methane emissions. In addition, they are required to monitor water quality using automated sensors and remote platforms to ensure instant identification and mitigation of pollution incidents.

- As the Netherlands is highly exposed to physical climate risk, in particular flooding, the monitoring and adaptation of infrastructure is considered on an ongoing basis and is required by regulation.

Adaptation

Assessment	Description
Dark to Medium green	• Flood protection • Other flood defenses • Pumping stations • Sustainable use of water • Water shortages

Analytical considerations

- Climate scientists are certain that some degree of climate change is unavoidable. This underscores the need for governments and companies to plan for and mitigate potential risks through adaptation measures, reducing the financial and environmental effects of climate change as well as the resources and emissions associated with rebuilding damaged assets and infrastructure. The supply of water, a form of natural capital that is necessary for economy activity and public health, must be secured to ensure reliable access and quality for all stakeholders. However, water systems can be energy intensive, disruptive to hydrology and aquatic ecosystems, and can exacerbate water stress if not sufficiently managed.
- We consider the activities eligible under this category to have varying levels of environmental and climate benefits. This is because, while they may contribute to the improved resilience and quality of water systems in the country, the construction and operations of such mechanisms can have significant implications for aquatic ecosystems when they entail altering water levels. To reflect this degree of variability, we assess the category as Dark to Medium green.
- Dutch water authorities will use the financing from NWB Bank to invest in flood defense mechanisms, which is one of their main priorities given the country's high exposure to flood risk. The Netherland's infrastructure system is 18,000 kilometers (km) long and consists of 3,200 km of primary flood defenses (i.e. that protect from the sea and major rivers), 10,700 km of regional defenses, and 4,000 km of minor ones. The main focus is strengthening primary flood defenses as part of the country's Flood Protection Program. Such initiatives can involve significant emissions from the materials and equipment used during construction. Dutch water authorities implement various initiatives to address this risk, including the Clean and Emission-Free Construction program that promotes machinery with cleaner or fully electrified engines, life cycle analyses for new projects, optimized materials transport, and the use of locally sourced or reused materials. Collectively, such measures may reduce construction emissions by 50%. As such, we consider financed adaptation measures to be Dark green, because they will prevent damage to infrastructure from flooding and the safeguards implemented by the water authorities systematically address the negative climate impacts of construction activities.
- Dutch water authorities may also invest in their overall water transport and treatment systems to ensure that water quality meets regulatory requirements and to prevent water shortages. Examples of projects to ensure the sustainable use of water include creating nature-friendly riverbanks, re-meandering watercourses, restoring streams, constructing fish passages, and carrying out maintenance work. Given that such measures will have positive environmental benefits on water quality and biodiversity, we consider them to be Dark green. The prevention of water shortages requires system optimization and monitoring of water extraction and use by different stakeholders, including shipping, fisheries, industry, and drinking water suppliers. Eligible projects may include developing water storage areas and increasing the carrying capacity of existing water systems.
- Pumping stations are used to transport water and sewage when gravity cannot through a process that can be materially energy intensive. We assess such projects that are fully electrified as Dark green and those with fossil fuel exposure as Medium green. This is to reflect their role in the sustainable management of water resources in the Netherlands, as well as the climate impacts of the systems exposed to emissions from fossil fuel usage.
- The operation of water systems and the construction of the associated infrastructure and flood defense mechanisms may result in environmental and climate impacts. Dutch water authorities are required by the Environment and Planning Act to implement safeguards to address such risks. In addition, they aim to use fully electrified construction vehicles by 2033 and to

be climate neutral by 2035. As fossil fuel equipment has not been excluded from this framework, physical climate adaptation measures may be applied to infrastructure and assets with higher carbon footprints. This exposure may decrease as the water authorities phase out their use as part of climate neutrality plans.

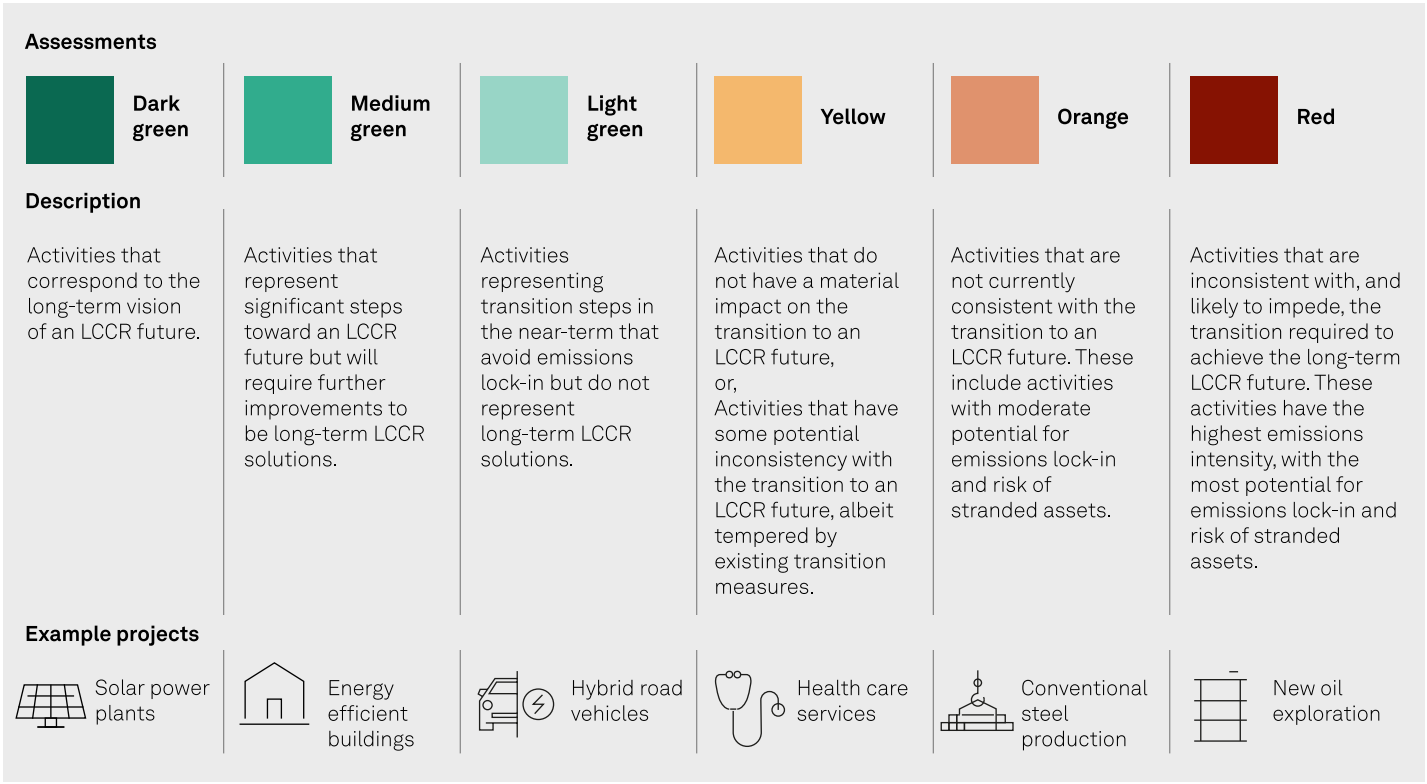
Biodiversity

Assessment	Description
Dark to Medium green	• Sanitation and dredging of waterbeds • Water treatment • Transport and cleaning of wastewater • Disposal of sewage sludge

Analytical considerations

- Wastewater systems are a key component of a low-carbon, climate-resilient future because they reduce pollution, enable resource recovery, and enhance ecosystems and public health. However, these systems are energy intensive and can produce significant solid waste and methane emissions if they are not sufficiently managed.
- We assess the eligible activities under this category as Dark green or Medium green depending on the degree to which the facilities have incorporated energy and nutrient recovery in wastewater treatment. This may vary between sites, with some potentially lacking the implementation of such mechanisms. That said, we consider it likely that in the Dutch context the majority of the facilities will be in line with either a Dark green or Medium green shade given the investments that the water authorities have made to date. This is represented in the interval Dark to Medium green shade for the overall category.
- Dutch water authorities may use financing obtained from NWB Bank to invest in projects aimed at reducing the potential for pollution from contaminated water and wastewater. Sanitation and dredging practices remove accumulated materials such as silt and sand from waterbeds, thereby allowing for improvements in water flow and land drainage and preventing flooding. Wastewater treatment facilities are essential to the prevention of pollution and public safety risks. Although Dutch water authorities aim to be climate neutral by 2035, which means they are investing in lower-carbon systems, there are facilities that use fossil powered equipment or natural gas. Water authorities aim to reduce sewage sludge disposal by investing in biogas production from anaerobic digestion and nutrient recovery (e.g. the extraction of Kaumera), which decreases the volume needing to be disposed by 35%. Sewage that cannot be re-processed in this way is either incinerated, temporarily stored, or exported to be used as fertilizer. The water authorities have so far performed well in terms of nutrient recovery from wastewater. For example, in 2023 the proportion of nitrogen removed from wastewater was 83.7%, 12% higher than the regulatory threshold.
- The projects listed in this category may result in negative climate and environmental impacts, including biodiversity risks from dredging operations, pollution from waste and byproduct generation, and leakage from wastewater treatment facilities, as well as carbon and methane emissions. Dutch water authorities implement comprehensive environmental safeguards as per the Environment and Planning Act. For example, to prevent biodiversity risks from dredging, they use ecologically responsible maintenance protocols that align with the Biodiversity Framework 2.0, including seasonal timing, selective sediment removal, and monitoring indicators. In addition, they implement circular resource recovery to reduce the volume of sludge that requires treatment and disposal, and use data-focused monitoring to prevent leaks. As part of their climate neutrality strategy, water authorities aim to reduce methane emissions from wastewater treatment facilities through measures like monitoring, gas-tight covers, and biogas management. This has not yet resulted in a quantifiable reduction in methane emissions, but water authorities expect an acceleration of technical interventions will help them achieve their 2035 climate neutrality target.
- Due to their fixed nature, treatment facilities and water systems may be exposed to physical climate risk, in particular from flooding. Water authorities are required to ensure the resilience of assets and infrastructure as per regulation.

S&P Global Ratings' Shades of Green



Note: For us to consider use of proceeds aligned with ICMA principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon, climate-resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the negative effect of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

Mapping To The U.N.'s Sustainable Development Goals

Where the financing documentation references the Sustainable Development Goals (SDGs), we consider which SDGs it contributes to. We compare the activities funded by the financing to the International Capital Markets Association (ICMA)'s SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not affect our alignment opinion.

This framework intends to contribute to the following SDGs:

Use of proceeds	SDGs				
Mitigation					
	6. Clean water and sanitation	**7. Affordable and clean energy**	**13. Climate action***	**14. Life below water**	**15. Life on land**
Adaptation					
	6. Clean water and sanitation	**7. Affordable and clean energy**	**13. Climate action***	**14. Life below water**	**15. Life on land**
Biodiversity					
	6. Clean water and sanitation*	**7. Affordable and clean energy**	**13. Climate action**	**14. Life below water***	**15. Life on land***

*The eligible project categories link to these SDGs in the ICMA mapping.

Related Research

- ESG Materiality Map: Utility Networks, May 18, 2022
- Analytical Approach: Second Party Opinions, March 6, 2025
- FAQ: Applying Our Integrated Analytical Approach For Second Party Opinions, March 6, 2025
- Analytical Approach: Shades Of Green Assessments, July 27, 2023

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